

IN THE CLAIMS

1) (Presently Amended) A method for storing data that is transmitted from a host to a flash memory via a bus, said method utilizing a cache memory that has banks of Magnetic Random Access Memory (MRAM), said flash memory being divided into sectors, said transmitted data being addressed to particular sectors of said flash memory, said method comprising the steps of;

exclusively associating a bank of MRAM memory with a particular sector of said flash memory to which data has been transmitted,

temporarily storing data transmitted to said flash memory in said associated bank of MRAM memory, and

transmitting data from a MRAM memory bank to the associated sector in said flash memory when said MRAM memory bank has been filled filled to the capacity of said sector.

2) (Original) The method recited in claim 1 wherein there are less banks of MRAM memory than there are sectors in said flash memory.

3) (Original) The method recited in claim 1 wherein said flash memory is NAND flash memory.

4) (Original) The method recited in claim 1 wherein said Flash memory and said MRAM memory are in a thumb drive.

5) (Original) The method recited in claim 1 wherein a MRAM data bank is disassociated from a sector in said flash memory when data from said MRAM bank is transmitted to the associated sector in said flash memory.

6) (Original) The method in claim 1 wherein said bus is a Universal Serial Bus (USB).

7) (Original) The method in claim 1 wherein each MRAM memory bank is at least as large as a sector in said flash memory.

8) (Presently Amended) A cache located between a USB bus and a flash memory, said bus transmitting data destined for particular sectors of said flash memory, said data being transmitted faster than the rate at which data can be directly stored in said flash memory, said flash memory being divided into sectors, said cache comprising;

a plurality of banks of Magnetic Random Access Memory (MRAM), each bank having at least a capacity equal to the size of a sector in said flash memory,

means for determining ~~to which~~ the particular sector of said flash memory to which said data is destined,

means for temporarily and exclusively associating a bank of said MRAM with a sector of said flash memory to which data is destined,

means which stores data received from said USB in the associated MRAM bank,
and

means which transfers data from an MRAM memory bank to the associated sector of said flash memory when said MRAM memory bank is full.

9) (Original) The cache recited in claim 8 wherein said bus is a Universal Serial Bus (USB).

10) (Presently Amended) The cache recited in claim 8 including an embedded processor that receives and decodes commands received from said USB serial bus.

11) (Original) The cache recited in claim 8 wherein said flash memory is NAND flash memory.

12) (Original) The cache recited in claim 8 wherein there are less banks of MRAM memory than there are sectors in said flash memory.

13) (Presently Amended) ~~The A-thumb memory drive that includes the~~ cache recited in claim 8 wherein said cache is part of a thumb drive.

14) (Original) The cache recited in claim 8 wherein a MRAM data bank is disassociated from a sector in said flash memory when data from said MRAM bank is transmitted to the associated sector in said flash memory.

15) (Presently Amended) A method of operating a cache located between a Universal Serial Bus (USB) and a flash memory, said USB transmitting data faster than the rate at which data can be stored in said flash memory, said flash memory being divided into sectors, said cache comprising;

a plurality of banks of Magnetic Random Access Memory (MRAM), each bank having a size equal to at least the size of a sector in said flash memory,

said method comprising,

determining to which sector of said flash memory data is destined,

temporarily and exclusively associating a bank of said MRAM with a sector of said flash memory to which data is destined,

temporarily storing data received from said USB in the associated MRAM bank,
and

transferring data from an MRAM memory bank to the associated sector of said flash memory when said MRAM memory bank is filled with an amount of data equal to the size of said sector.

16) (Original) The method recited in claim 15 wherein there are less banks of MRAM memory than there are sectors in said flash memory.

17) (Original) The method recited in claim 15 wherein said flash memory is NAND flash memory.

18) (Original) The method recited in claim 15 wherein said flash memory and said MRAM memory are in a thumb drive.

19) (Original) The method recited in claim 15 wherein a MRAM data bank is disassociated from a sector in said flash memory when data from said MRAM bank is transmitted to the associated sector in said flash memory.

20) (Original) The method recited in claim 15 wherein said cache does not lose any data if power to said cache is lost.